A Geometric Comparison of Aerofoil Shape Parameterisation Methods

Supplementary Figures

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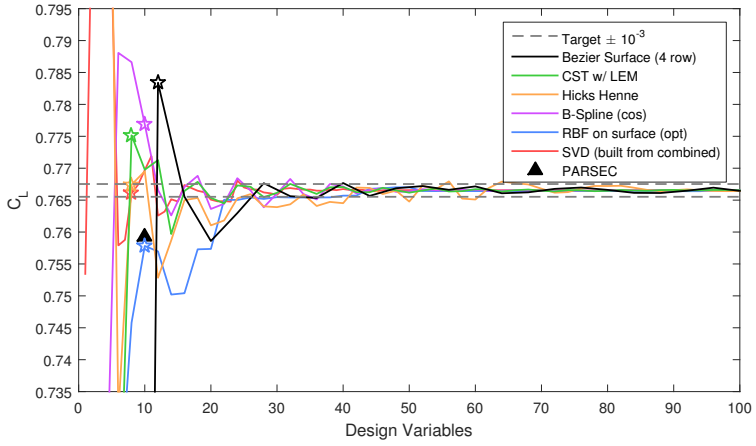
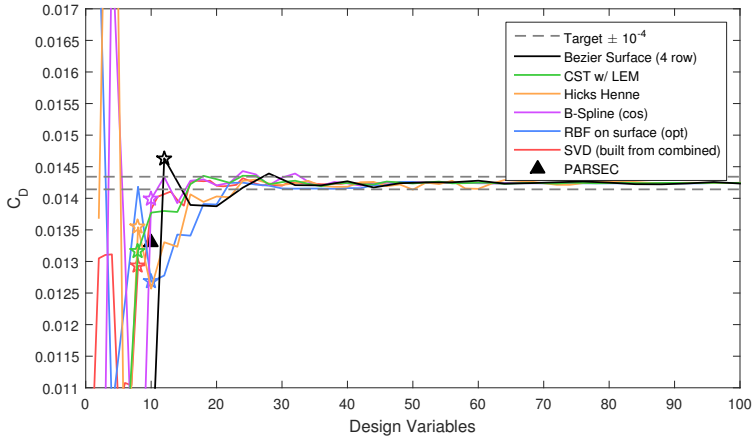
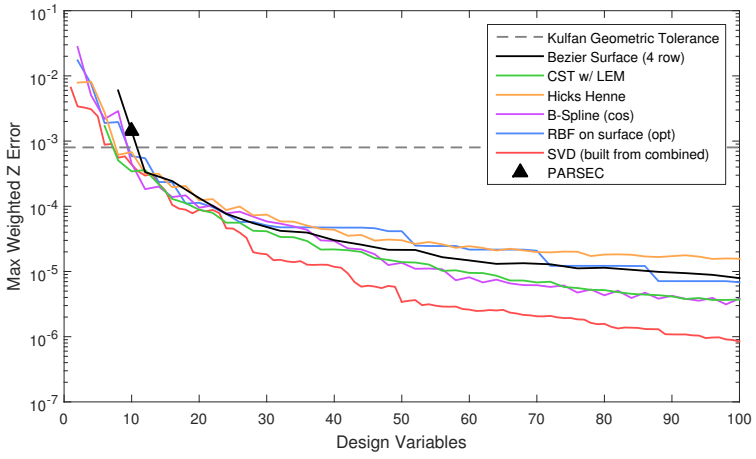


a) Lift Coefficient

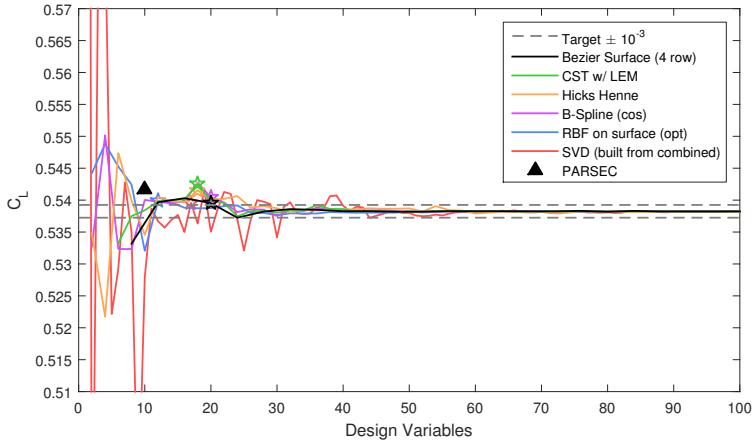


b) Drag Coefficient

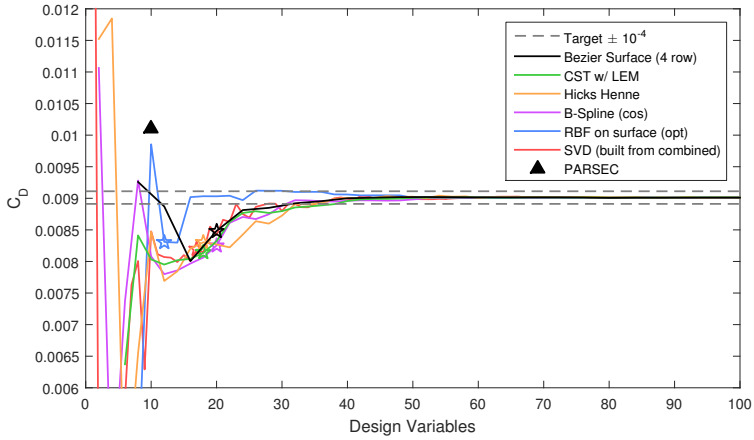


c) Max Weighted z Error

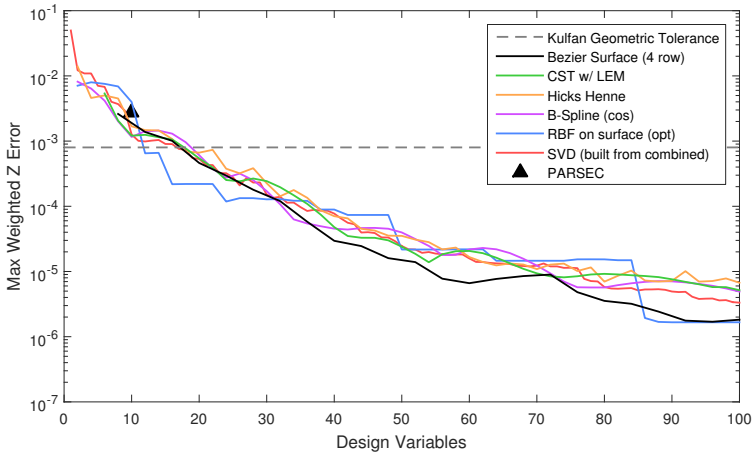
Figure 1. Convergence of aerodynamic and geometric properties for increasing design variables for each parameterisation method for the NACA4412 case study; ★ represents first point Kulfan's geometry tolerance is satisfied.



a) Lift Coefficient

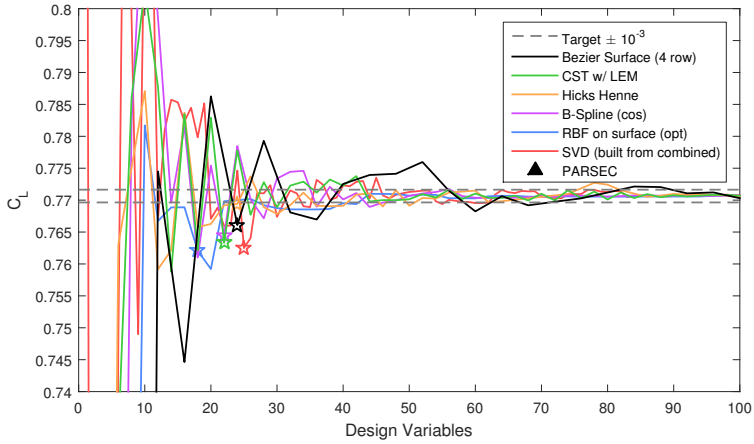


b) Drag Coefficient

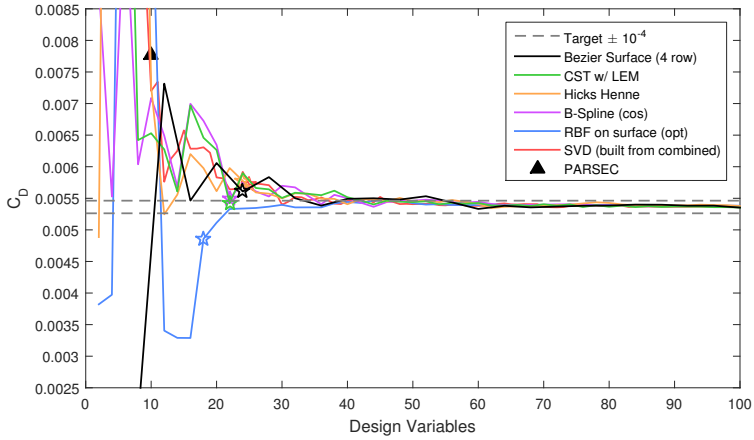


c) Max Weighted z Error

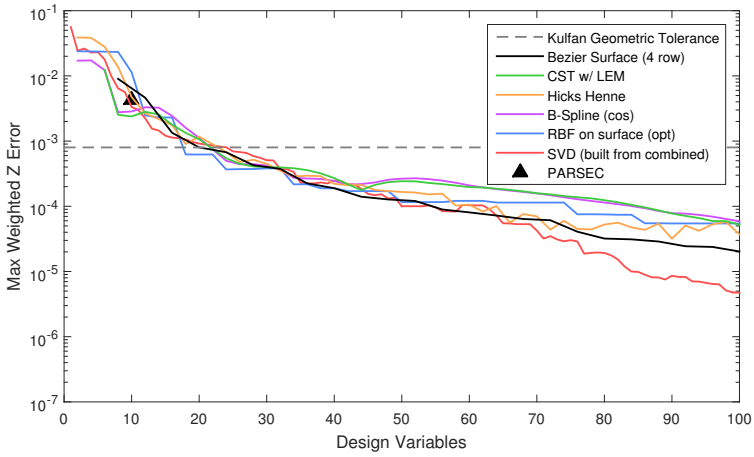
Figure 2. Convergence of aerodynamic and geometric properties for increasing design variables for each parameterisation method for the ONERA M6 case study; ★ represents first point Kulfan's geometry tolerance is satisfied.



a) Lift Coefficient

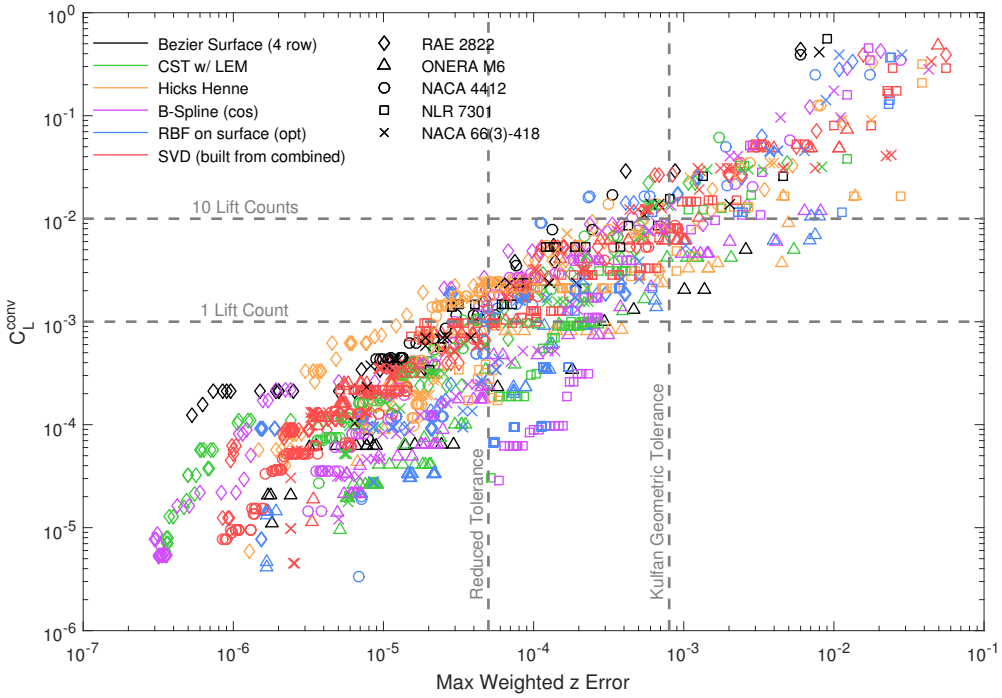


b) Drag Coefficient

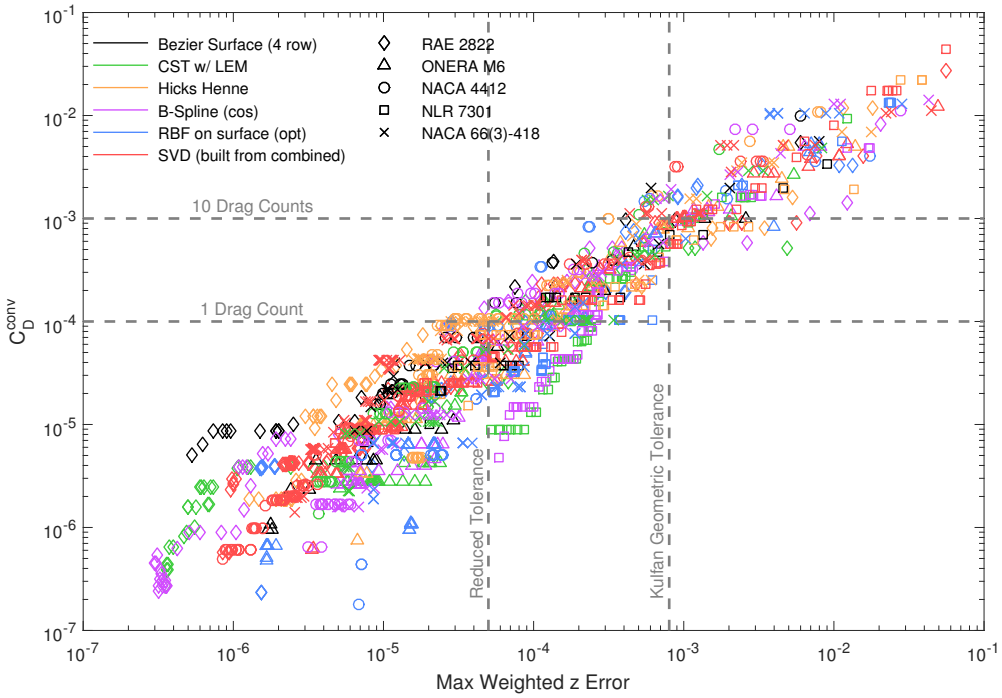


c) Max Weighted z Error

Figure 3. Convergence of aerodynamic and geometric properties for increasing design variables for each parameterisation method for the NLR 7301 case study; ★ represents first point Kulfan's geometry tolerance is satisfied.



a) Lift Coefficient



b) Drag Coefficient

Figure 4. Scatter graph of the 'Max weighted z error' against the convergence of the force coefficients for all case study CFD simulations.